

## **WHAT IS CLAIMED IS:**

### **1. 1. A linear compressor comprising:**

a cylinder block forming a compressing chamber;

a piston reciprocatably provided in the compressing chamber;

a reciprocating member connected to the piston to reciprocate with the piston as a single body;

a driver driving the reciprocating member to reciprocate; and

a resonance spring comprising a first connecting part formed with a plurality of first connecting holes to permit connection to the cylinder block, a second connecting part that is provided inside of the first connecting part and formed with a second connecting hole to permit connection to the reciprocating member to reciprocate with the reciprocating member as a single body, and a plurality of arms spaced apart from one another between the first connecting part and the second connecting part,

each of the arms comprising a first end connected to the first connecting part to be positioned between the plurality of first connecting holes, a second end connected to the second connecting part to be positioned in the vicinity of the second connecting part, and a plurality of arm bodies of a spiral shape to connect the first end and the second end.

2. The linear compressor according to claim 1, wherein a width of the first connecting part is in a range of approximately one half a width of the arm body and three times the width of the arm body.

3. The linear compressor according to claim 2, wherein the distance between the first connecting part and each of the arm bodies is in a range of approximately one half the width of the arm body and three times the width of the arm body.

4. The linear compressor according to claim 3, wherein the width of the first connecting part is increased from the first end of the arm along a direction of the arm body.

5. The linear compressor according to claim 4, wherein a first groove is inwardly formed on an outer circumference of the first connecting part in a vicinity of the first end of each of the arms.

6. The linear compressor according to claim 5, wherein a second groove is outwardly formed on an inner circumference of the first connecting part in a vicinity of the first end.

7. The linear compressor according to claim 1, wherein the number of the arms is identical with the number of the first connecting holes.

8. The linear compressor according to claim 7, wherein the arms and the first connecting holes are provided three in number at equal intervals, respectively.

9. The linear compressor according to claim 2, wherein the number of the arms is identical with the number of the first connecting holes.

10. The linear compressor according to claim 9, wherein the arms and the first connecting holes are provided three in number at equal intervals, respectively.

11. The linear compressor according to claim 5, wherein the number of the arms is identical with the number of the first connecting holes.

12. The linear compressor according to claim 11, wherein the arms and the first connecting holes are provided three in number at equal intervals, respectively.

13. The linear compressor according to claim 1, wherein the resonance spring is of a disk shape.

14. The linear compressor according to claim 1, wherein the driver comprises an outer core connected to the cylinder block, an inner core provided inside of the outer core and

spaced apart from the outer core and a magnet provided between the outer core and the inner core to reciprocate by a magnetic field generated between the outer core and the inner core, and

the magnet reciprocates with the reciprocating member as a single body and the outer core is connected with the first connecting hole of the first connecting part.